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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/123,430	07/28/1998	DONALD L. YATES	M4065.073/P0	5528

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EXAMINER	
KEBEDE, BROOK	

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No.	Applicant(s)	
	09/123,430	YATES, DONALD L.	
	Examiner	Art Unit	
	Brook Kebede	2823	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 18 June 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☒ Newly proposed or amended claim(s) 11,13,23,52,58,63,65 and 72 would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: (See the attachment).

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: 11,23,52,58,65 and 72.

   Claim(s) objected to: 13 and 63.

   Claim(s) rejected: 1,6,7,9,10,12,15,17,18,20-22,25-27,44,61,62,64,66-71 and 73-77.

   Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☐ Other: _____

Continuation Sheet (PTO-303)

Advisory Action

1. Applicants' argument, see Page 15 of applicants' response that was filed on June 18, 2004, with respect to rejection of claims 68-71 under 35 U.S.C. 112 second paragraph have been fully considered and are persuasive. Accordingly, the rejection under 35 U.S.C. 112 second paragraph of claims 68-71 has been withdrawn.

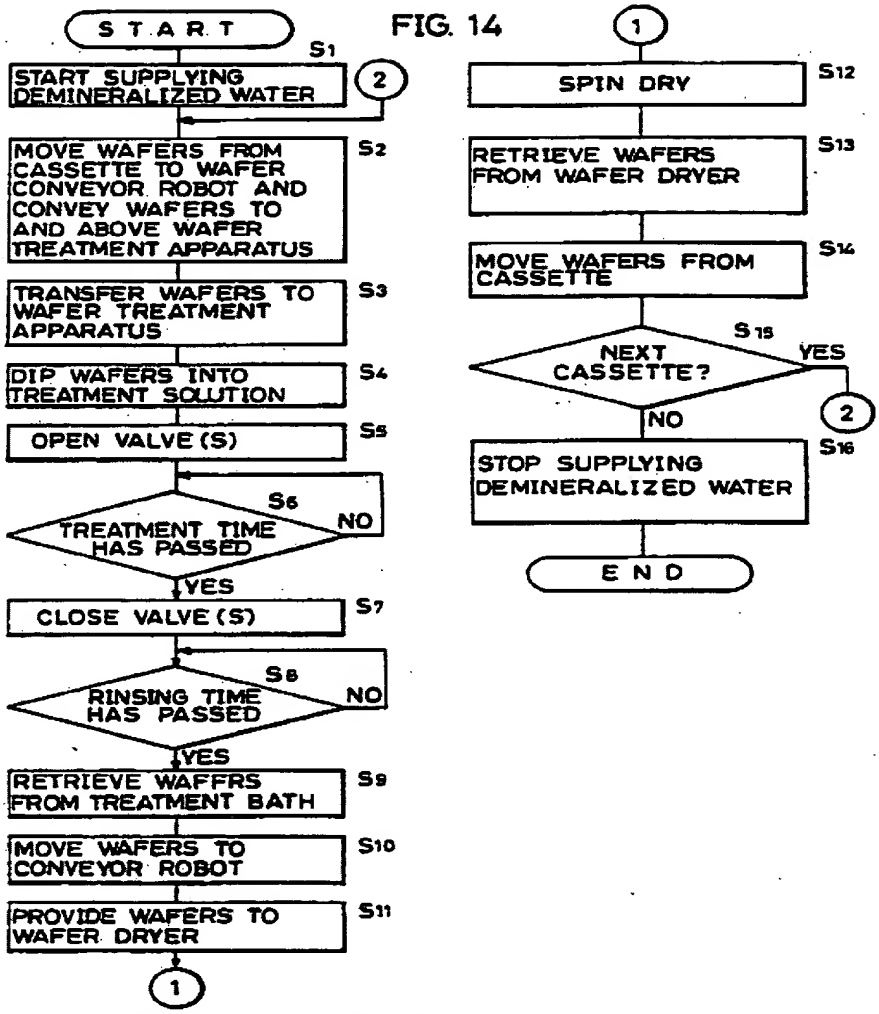
2. Claims 11, 13, 23, 52, 58, 63, 65, and 72 would be allowable if submitted in a separate timely filed amendment by canceling the non-allowable claims.

Response to Arguments

3. On cursory consideration, the request for reconsideration and the proposed amendment, which has been entered, does not clearly appear to overcome the rejections.

With respect to rejection of claim 44 under 35 U.S.C. 102(b), applicants argued that "Nishizawa et al. does not disclose "stopping said continuous feeding acid solution..." (see applicants' argument in Page 15).

In response applicants' argument the examiner respectfully submits that Nishizawa et al. '184 disclose all the claimed limitations of claim 44 including the limitation of "stopping said continuous feeding acid solution." In addition, the apparatus as depicted in Fig. 2 and the process as depicted in Fig. 14 capable of stopping said continuous feeding acid solution. For example, as shown in Fig. 14 below, in step 3 (S3) the wafers transferred to wafer treatment apparatus; in step 4 (S4) the wafer immersing into treatment solution; in step 5 (S5) the valves open; in step 6 if the treatment time passed, the next step is will be the step of closing the valve (i.e., step 6 S6), and if not repeating of step 5 proceeded.

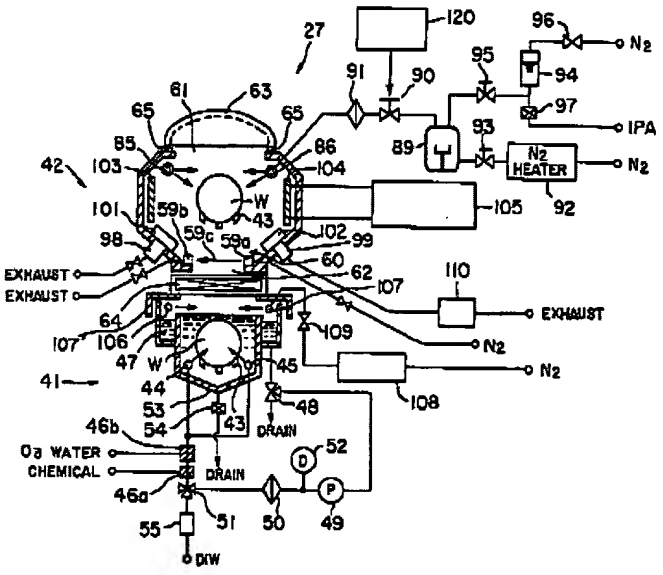


As shown in Figs. 2 and 14, Nishizawa et al. '184 disclose all the claimed limitations of claims 44 including the limitation of "stopping said continuous feeding acid solution."

Therefore, the rejection of claim 44 under 35 U.S.C. 102 is deemed proper.

With respect to rejection of claims 66 and 73 under 35 U.S.C. 102(b), applicants argued that "Nothing in the Kamikawa et al. reference drawings or text teaches that any fluid has been removed out of the bath by lifting the wafer W or that the wafer W is lifted rapidly ...and does not anticipate a wafer treatment method for removing contaminants ..." (see applicants' argument in Pages 16-18).

In response applicants' argument the examiner respectfully submits that Kamikawa et al. '588 disclose all the claimed limitations of claims 66 and 73 as applied in the Office action that was mailed April 14, 2004. In addition, applicants' contention that "Nothing in the Kamikawa et al. reference drawings or text teaches that any fluid has been removed out of the bath by lifting the wafer W or that the wafer W is lifted rapidly ...and does not anticipate a wafer treatment method for removing contaminants ..." is incorrect. As depicted in Fig. 4 the wafer W placed in the cleaning bath that lower portion of the cleaning apparatus as depicted below.



Kamikawa et al. '588 entire invention is providing a cleaning apparatus and cleaning method of semiconductor wafers (see Abstract). Kamikawa et al. '588 also disclose removing of the wafer W from the lower processing bath to the upper drying chamber and such process is a rapid process (rapid removal of the wafer W) and the upper portion of the cleaning/etching solution is removed due to lifting of the wafer cassette. In addition, "cleaning" and "etching" are

alternatively used in the instant application and "etching" does not have any special meaning, i.e., "etching" is "cleaning."

Therefore, the rejection of claims 66 and 73 under 35 U.S.C. 102 is deemed proper.

With respect to rejection of claims 1, 6, 7, 9, 12, 15, 17, 20, 22, 25, 26, 61, 64, 67, 68, 71, and 74-77 under 35 U.S.C. 103, applicants argued that "there is no motivation to combine Nishizawa et al. and Hayami et al. ..." (see applicants' argument in Pages 18-36).

In response applicants' argument the examiner respectfully submits that the combination of Nishizawa et al. '184 and Hayami et al. '616 disclose all the claimed limitations of claims , 6, 7, 9, 12, 15, 17, 20, 22, 25, 26, 61, 64, 67, 68, 71, and 74-77 as applied in the Office action that was mailed on was mailed April 14, 2004.

Both Nishizawa et al. '184 and Hayami et al. '616 teachings directed to apparatus and a method of cleaning articles such as semiconductor wafers using a cleaning bath. And the teachings of Nishizawa et al. '184and Hayami et al. '616 are analogous.

It would have been within the scope of ordinary skill in the art to combine the teachings of Nishizawa et al. '184 and Hayami et al. '616 in order to reduce a liquid holding capacity of the processing apparatus and rapidly displacing an upper portion of the semiconductor processing fluid form the processing apparatus while the wafer remain fully immersed on a lower portion of the bath of the semiconductor processing fluid within the processing apparatus to remove the surface contaminants form the air/liquid interface according the teachings of Hayami et al. '616 because one having ordinary skill in the art would have been motivated to look to analogous art teaching alternative suitable or useful methods of cleaning of wafer and the use of the door would have provided removing of contaminants from the top of the wafer etching

(cleaning) bath when the door is opened and that lowers the over all volume of the process bath fluid containing capacity and displacing the cleaning fluid while the wafer remains in the cleaning bath, i.e., the art recognized suitability for an intended purpose. Therefore, the reason to combine Nishizawa et al. '184 and Hayami et al. '616 is directly came from Hayami et al. '616 reference and the *prima facie* case of obviousness has been met and the rejection under 35 U.S.C. § 103 is deemed proper.

Correspondence

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BK
July 12, 2004

George Fourson
Primary Examiner